ISPIV

Munich 2019

July 22-24, 2019

Conference Programme

Sunday, July 21st	
17:00-19:00	**Registration**

	Monday, July 22nd, morning 1
08:00-08:45	Registration
	Room A
08:45-09:00	Welcome by the Conference Chair Prof. Christian J. Kähler
09:05-09:50	Keynote Lecture Prof. Ivan Marusic, University of Melbourne, Australia, "Large spatial range measurements in high Reynolds number wall-bounded flows" Session Chair: Prof. Ellen Longmire

	Room A	Room B	Room C	Room D
	Session 1.1.A: 3D Methods I Session Chair: Longmire E	Session 1.1.B: Algorithms & Techniques I Session Chair: Lecordier B	Session 1.1.C: Boundary Layers I Session Chair: de Silva C	Session 1.1.D: Biological Flows I Session Chair: Poelma C
09:55-10:15	4D Digital Holographic PIV/PTV with 3D Volume Deconvolution and Predictive Inverse Reconstruction Soria J, Sun B, Ahmed A, Atkinson C	3D-reconstruction of O2 bubble wake concentration fields von Kameke A, Kexel F, Rüttinger S, Colombi R, Kastens S, Schlüter M	Conditional averages of large scale motions through synchronous PIV and surface shear stress measurements Pabon RJ, Ukeiley L, Mills D, Sheplak M	Pulsatile flow of non- Newtonian fluid in stenosed micro channel Yeom E, Hong H, Song JM
10:15-10:35	Using a new 4D Digital Holographic PIV/PTV (4D-DHPIV/PTV) Methodology to Measure Wall-bounded Shear Flows Sun B, Ahmed A, Atkinson C, Soria J	Optimization of Molecular Tagging Velocimetry for Shocked Particle Studies Charonko J, Mayer JM, Bordoloi A, Prestridge K	Experimental assessment of large-scale motions in turbulent boundary layers Güemes A, Ianiro A, Discetti S	Stereoscopic PIV study of the influence of aortic valve tilt angle on the flow pattern in the ascending aorta region Fernandes LS, Bessa GM, Gomes BAA, Azevedo LFA
10:35-11:05	Coffee break

Monday, July 22nd, morning 2

	Room A	Room B	Room C	Room D
	Session 1.2.A: 3D Methods II **Session Chair: Lecordier B**	**Session 1.2.B: Algorithms & Techniques II** **Session Chair: Vlachos P**	**Session 1.2.C: Boundary Layers II** **Session Chair: de Silva C**	**Session 1.2.D: Biological Flows II** **Session Chair: Poelma C**
11:05-11:25	**A new sparsity based particle image reconstruction approach for particle detection** Tilat SA, Champagnat F, Herzet C	**Vortex based seedingless image velocimetry using high-speed holography** Gürtler J, Greiffenhagen F, Woisetschläger J, Czarske J	**Mach number influence on large-scale structures in ZPG turbulent boundary layers** Bross M, Scharnowski S, Kähler CJ	**In-vivo measurement of the blood flow in the heart of Medaka** Ninomiya N, Matsuda M, Araki N
11:25-11:45	**A Joint Energy Formulation for 3D Particle Reconstruction and Velocity Field Estimation** Lasinger K, Vogel C, Pock T, Schindler K	**Flow measurements through fluctuating interfaces with dynamic wavefront correction** Radner H, Büttner L, Czarske J	**PIV experiments to examine the manipulation of large-scale structures using cross-flow jets in a turbulent boundary layer** Ruan Z, de Silva CM, Hutchins N, Marusic I	**In vitro fluid dynamic measurements as a support of the cardiovascular Patient Specific Diagnosis** Querzoli G, Satta V, Matta G, Ferrari S, Badas MG, Pibiri M, Sica E, Bitti G
11:45-12:05	**Lagrangian Particle Image Velocimetry** Yang Y, Heitz D, Memin E	**Geometric Scattering Removal in CC-DGV by Structured Illumination** Boyda M, Byun G, Saltzman A, Lowe KT	**Relationship between boundary layer features and shock reflection** Baidya R, Scharnowski S, Bross M, Kähler CJ	**PIV-PTV comparison of the oscillating flow inside the human lungs** Janke T, Schwarze R, Bauer K
12:05-12:25	**Dense volumetric velocity field reconstruction with time-segment assimilation** González G, Sciacchitano A, Scarano F	**Particle Diffusometry: PIV based method for Pathogen Detection on Smartphone-Based Platform** Hoon Lee DH, Clayton KN, Moehling TJ, Kinzer-Ursem TL, Linnes JC, Wereley ST	**Simultaneous stereo PIV and MPS3 wall-shear stress measurements in turbulent channel flow** Mäteling E, Mattern P, Michaux F, Schröder W, Klaas M	**A time-resolved PIV-based methodology to analyse the acoustics of human phonation** Lodermeyer A, Bagheri E, Nager C, Nusser K, Becker S, Dollinger M, Kniesburges S
12:25-12:45	**Multi-Δt 3D-PTV based on Reynolds decomposition** Saredi E, Sciacchitano A, Scarano F	**Assessment of three-dimensional turbulent density measurements from tomographic background-oriented schlieren (BOS)** Amjad S, Soria J, Atkinson C	**Stereoscopic PTV measurements in the housing/rotor cavity of a shrouded turbine rotor** Hain R, Fuchs T, Wein L, Kluge T, Seume J, Kähler CJ	**Investigation of drug transport phenomena inside subcutaneous tissues** Park H, Kim H
12:45-13:30	**Lunch**			

Monday, July 22nd, afternoon 1

	Room A	Room B	Room C	Room D
	Session 1.3.A: 3D Applications I **Session Chair: Schröder A**	**Session 1.3.B: Uncertainty Quantification** **Session Chair: Vlachos P**	**Session 1.3.C: Aerodynamics** **Session Chair: Schröder W**	**Session 1.3.D: Convection & Heat** **Session Chair: Cierpka C**
13:30-13:50	**Large-scale volumetric characterization of a turbulent boundary layer flow** Schanz D, Novara M, Geisler R, Agocs J, Eich F, Bross M, Kähler CJ, Schröder A	**Influence of time interval between two snapshots on the measurement accuracy of stereoscopic PIV** Chen Q, Zhong Q	**PIV measurements of the flow around an aero-engine intake inside an icing wind tunnel** Velandia JS, Bansmer SE	**Simultaneous measurements of velocity and temperature fields in large aspect ratio Rayleigh-Benard convection** Moller S, Thieme A, Resagk C, Cierpka C
13:50-14:10	**4D Particle Tracking Velocimetry measurements in a Von Karman turbulence experiment** Ostovan Y, Cuvier C, Debue P, Valori V, Cheminet A, Foucaut J-M, Laval J-P, Wiertel-Gasquet C, Vincent P, Dubrulle B, Daviaud F	**Multi-Δt approach for peak-locking error correction and uncertainty quantification in PIV** Adatrao S, Sciacchitano A	**Stereo-PIV Measurements of Vortex-Interaction Effects on Generic Delta Wing Planforms** Pfnür S, Breitsamter C	**Experimental analysis of Rayleigh-Bernard convection in a cylindrical cell by tomographic PIV** Paolillo G, Greco CS, Astarita T, Cardone G
14:10-14:30	**High-speed tomographic PIV of cylinder wakes in a shock tube using a pulse-burst laser** Lynch KP, Wagner JL	**Uncertainty Reduction of FlowFit Flow Field Estimation by Use of Virtual Particles** Ehlers F, Schröder A, Gesemann S	**On Subsonic Near-Wake Flows of a Space Launcher Configuration with Various Base Geometries** Saile D, Kühl V, Gülhan A	**Wall Image Velocimetry through deviation of temperature disturbances transport from Taylor hypothesis** Miozzi M, Di Felice F, Klein C, Costantini M
14:30-14:50	**A characterization of the flow around a surface mounted cube by TR-PIV and -3D Shake-The-Box** Schröder A, Schanz D, Geisler R, Jahn T, Willert CE, Leclaire B, Gallas Q	**Uncertainty Quantification in Volumetric PTV** Bhattacharya S, Vlachos PP	**Study of Upstream Travelling Waves in Transonic Buffet** D'Aguanno A, Schrijer FFJ, van Oudheusden B	**Convective near-wall flow in thermally stratified hot water storage tanks** Otto H, Resagk C, Cierpka C
14:50-15:10	**Shake-the-Box PTV in the Wake of an Ahmed Body using Helium Filled Soap Bubbles** Booysen A, Das P, Ghaemi S	**PIV measurement uncertainty in combustion flows due to inhomogeneous refractive index fields** Vanselow C, Stöbener D, Kiefer J, Fischer A	**Lagrangian method to characterize interactions of vortices and outer layer flow around a laminar separation bubble** Zhang K, Rival DE	**PIV/LIF measurements of the natural convection flows** Jung SY, Park H
15:10-15:30	**Investigation of the Ahmed body cross-wind flow topology by robotic volumetric PIV** Sciacchitano A, Giaquinta D	**Assessment of Uncertainty Quantification methods for density estimation from Background Oriented Schlieren (BOS) measurements** Rajendran LK, Bhattacharya S, Zhang J, Bane SPM, Vlachos PP	**Interactive process of separation bubble and large-scale vortical structure: FPGA-DMD approach for Phase-locking PIV measurement** Deng Y, Wang P, Fu H, Liu Y	**Experimental characterization of a fast heating system for microfluidic direct methanol fuel cells** Massing J, van der Schoot N, Kähler CJ, Cierpka C
15:30-16:00	**Coffee break**			

Monday, July 22nd, afternoon 2

	Room A	Room B	Room C	Room D
	Session 1.4.A: 3D Applications II **Session Chair: Astarita T**	**Session 1.4.B: Post-Processing** **Session Chair: Charonko J**	**Session 1.4.C: Flexible Wings** **Session Chair: de Kat R**	**Session 1.4.D: Engines & Combustion** **Session Chair: Willert C**
16:00-16:20	**4D-PTV of inertial particles in two-way and four-way coupling regimes** Ebrahimian M, Sanders S, Ghaemi S	**PIV data: Vortex Detection and Characterization** Coletta M, De Gregorio F, Visingardi A, Iuso G	**PIV applied to a moving rowing blade** Grift EJ, Tummers M, Overmars E, Westerweel J	**Evaluation of tumble ratio of an SI engine in steady flow bench by SPIV measurements** Yun G, Sung J, Ohm I
16:20-16:40	**Robotic Volumetric PIV measurements of a full-scale swimmer´s hand** van den Berg J, Jux C, Sciacchitano A, van de Water W, Westerweel J	**Multiscale Proper Orthogonal Decomposition (mPOD) of TR-PIV data: a Case Study on Transient Flows** Mendez MA, Hess D, Watz BB, Buchlin J-M	**Flow Field Characteristics of Translating and Revolving Flexible Wings** Percin M, Yazdanpanah M, Amiri H, van de Meerendonk R, van Oudheusden B	**Time Resolved Detailed Diagnostics to Characterize Step Fuel Composition Changes in a Lean Technically Premixed Hydrogen Enriched** Chterev I, Boxx I
16:40-17:00	**Tomo-PIV Measurements Inside a Helically Coiled Tube** Martins FJWA, Kovats P, Thevenin D, Zähringer K	**On the feasibility of selective spatial analysis for temporal adaptivity based on confidence statistics** Edwards M, Theunissen R, Allen CB	**Simultaneous measurements of flow velocity using Tomo-PIV and deformation of a flexible wing** Acher G, Thomas L, Tremblais B, Gomit G, Chatellier L, David L	**Cold Flow Measurement in Optical Internal Combustion Engine using PIV** Tsiogkas VD, Chraniotis A, Kolokotronis A, Tourlidakis A
17:00-17:20	**High-Speed Tomographic Measurements of Pulsatile Flows within Compliant Tubes** Hadfield J, Nobes DS	**Automatic mask generation for particle image velocimetry data using machine learning** Kislovskiy A, Mulleners K	**Effects of flexible wing on the aerodynamic performance of aircraft** Guo Q, Wang Z, Wang J	**Effects of Periodic Inflow Turbulence on the Statistics in the Wake of a Linear LPT Cascade at Jet-Engine relevant Test Conditions** Bitter M, Niehuis R
17:20-17:40	**Investigation of the 3D Flow in a Combustion Engine using High-Speed Tomo-PIV** Braun M, Schröder W, Klaas M	**An assessment of the correlation-based particle identification (CPI) method in the framework of Dual-Plane Stereo-Astigmatism (DPSA)** Kling NH, Kriegseis J, Haller F, Opfer L, Rogler P	**Experimental study on fluid-structure interaction of a flexible membrane wing** He X, Wang J, Feng L, Pan C	**PIV Measurements under Reacting and Non-Reacting Conditions at the Nozzle Outlet of the SPP1980 SpraySyn Burner** Martins FJWA, Kronenburg A, Beyrau F
17:40-18:00	**Flow-field analysis of subsonic jets at Mach 0.5 and 0.84 using 3D Multi-Pulse STB** Godbersen P, Manovski P, Novara M, Schanz D, Geisler R, Mohan NKD, Schröder A	**The validation and application of a Super-resolution PIV Post-Processing Method Based on Sub-Pixel Image Shifting and Optical Flow** Tian P, Chen F	**Experimental investigation of the fluid-structure interaction between a flexible plate and a periodic gust by means of Robotic Volumetric PIV** Mitrotta FMA, Sciacchitano A, Sodja J, De Breuker R, van Oudheusden BW	**High-speed PIV at the exit of a lean-burn combustion chamber operated at elevated pressure** Willert C, Schroll M, Heinze J, Soworka T

	Tuesday, July 23rd, morning 1			
	Room A			
08:45-09:30	Keynote Lecture Dr. Steven J. Beresh, Sandia National Laboratories in Albuquerque, USA, "Pushing the Frontiers of Time-Resolved PIV for Compressible Flows" Session Chair: Prof. Jerry Westerweel			
	Room A	**Room B**	**Room C**	**Room D**
	Session 2.1.A: 3D Applications III **Session Chair: Westerweel J**	**Session 2.1.B: Deep Learning & Data Assimil. I** **Session Chair: Discetti S**	**Session 2.1.C: Transition** **Session Chair: Yarusevych S**	**Session 2.1.D: Micro Flows** **Session Chair: Rossi M**
09:35-09:55	**Investigation of a large angle diffuser in the steady stall regime via 3D3C mean vector field statistics** Bijvoet B, Kitzhofer J, Dinulescu M	**Deep-PIV: a new framework of PIV using deep learning techniques** Cai S, Liang J, Zhou S, Gao Q, Xu C, Wei R, Wereley S, Kwon J	**Transitional flow in a 90° pipe bend** Burkert J, Schwarze R, Bauer K	**Volumetric Microscopic Flow Measurement with a Stereoscopic Micro-PIV System** Hesseling C, Fiedler L, Neal DR, Michaelis D
09:55-10:15	**3D Particle Tracking Velocimetry applied to bubble plumes from a free falling jet** de la Torre RGR, Kuchta M, Jensen A	**Deep artificial neural network architectures in PIV applications** Lagemann C, Lagemann K, Schröder W, Klaas M	**Orthogonal dual plane time resolved PIV measurements in bypass transition** Balamurugan G, Mandal AC	**Experimental Investigation on Fluid Mechanics of Different Micro Heat Transfer Devices** Spizzichino M, Sinibaldi G, Romano GP
10:15-10:35	**Three-dimensional tracking of finite-size spheres in a turbulent boundary layer** Tee YH, Barros D, Longmire EK	**On the use of machine learning algorithms for the calibration of astigmatism PTV** Cierpka C, König J, Chen M, Boho D, Mäder P	**PIV measurements of hypersonic laminar flow over a compression ramp** Lu J, Yang H, Zhang Q, Yin Z	**Flow characteristics inside droplets moving in a straight microchannel with rectangular section** Li M, Liu Z, Pang Y, Wang J
10:35-11:05	**Coffee break**			

Tuesday, July 23rd, morning 2

	Room A	Room B	Room C	Room D
	Session 2.2.A: Seeding **Session Chair: Yarusevych S**	**Session 2.2.B: Deep Learning & Data Assimil. II** **Session Chair: Discetti S**	**Session 2.2.C: Flow Control I** **Session Chair: Klaas M**	**Session 2.2.D: Echo PIV** **Session Chair: Christensen K**
11:05-11:25	**Soap bubbles for volumetric velocity measurements in air flows** Barros D, Duan Y, Troolin D, Longmire EK, Lai W	**Deep learning-based enhancement of digital holographic particle tracking velocimetry** Go T, Lee SJ	**Influence of Air-Jet Vortex Generators on Spatial Structures in a Shock Wave / Turbulent Boundary Layer Interaction** Ramaswamy DP, Schreyer A-M	**Extraction of Particle Residence Time using echo-Lagrangian particle tracking** Jeronimo MD, Najjari MR, Zhang K, Rival DE
11:25-11:45	**Effect of internal geometry and orientation on the performance of a helium-filled soap bubble nozzle** Gibeau B, Gingras D, Raffel J, Raffel M, Ghaemi S	**Deep Convolutional Matching based PIV** Ohmi K	**Phase-resolved measurements on a multi-slotted Synthetic Jets actuator** Ceglia G, Invigorito M, Chiatto M, Greco CS, Cardone G, de Luca L	**High frame rate flow measurement using Ultrasound Imaging Velocimetry** Hogendoorn W, Poelma C
11:45-12:05	**Measurement of time response of helium-filled soap bubbles** Meyer KE, Meyer-Johansen CO, Finderup A	**Data assimilation for PIV based on adaptive neuro fuzzy inference system (ANFIS)** Kim D, Kim KC	**Distribution of injecting flow in a multi-hole nozzle for gas injection by PIV measurements** Sung J, Cho J	**Simultaneous Ultrasound Imaging Velocimetry (UIV) and Flow Visualization in Taylor-Couette flows: Validation of UIV in single-phase flows** Dash A, Anantharaman A, Greidanus A, Poelma C
12:05-12:25	**Soap bubbles for large-scale PIV in industrial wind tunnels** Faleiros DE, Tuinstra M, van Rooijen BD, Scarano F, Sciacchitano A	**Learning fluid trajectory models for time-resolved PIV** Godet P, Champagnat F, Le Besnerais G, Plyer A	**Flow Characteristics of a Plane Jet Perturbed by Rectangular Tabs at a Slot Nozzle Exit** Mikami Y, Kiwata T, Noguchi K, Toyoda K	**In vivo time-resolved echo-PIV measurement of cardiovascular flows with Extracorporeal Membrane Oxygenation** Zhang Z, Katz J, Zhou X, Pierre AS, Lui C, Kearney S, Yeung E, Young J, Choi D
12:25-12:45	**Inverse technique for Lagrangian, non-Stokesian tracer particle correction** Galler JN, Rival DE		**Experimental identification of the aerodynamic mechanisms of load reduction in a tailored flow field** Wester TTB, Kampers G, Hölling M, Cordes U, Tropea CD, Peinke J, Gülker G	**On the use of ultrasound for fluid-structure interaction studies of the ascending aorta** Pejcic S, Najjari MR, Zhang K, Bisleri G, Rival DE
12:45-13:30	**Lunch**			

Tuesday, July 23rd, afternoon

Room A

13:30-14:30	**Ronald J. Adrian Award Lecture** **Session Chair: Prof. Christian J. Kähler**
14:30-15:00	**Coffee break**

	Room A	Room B	Room C	Room D
	Session 2.3.A: 3D Methods III **Session Chair: Fuchs T**	**Session 2.3.B: Deep Learning & Data Assimil. III** **Session Chair: Sciacchitano A**	**Session 2.3.C: Flow Control II** **Session Chair: Kim KC**	**Session 2.3.D: Transport & Mixing** **Session Chair: Rossi M**
15:00-15:20	**An open-source Shake-the-Box method and its performance evaluation** Tan S, Salibindla A, Masuk AUM, Ni R	**Unscented Kalman filter (UKF) based nonlinear parameter estimation for a turbulent boundary layer: a data assimilation framework** Pan Z, Zhang Y, Gustavsson JPR, Hickey J-P, Cattafesta III LN	**The effect of spacing on the flow around a pair of roughness cubes resolved by microscopic dual-view tomographic holography** Gao J, Agarwal K, Katz J	**Simultaneous measurement of velocity and concentration fields in Hele-Shaw cell** Alipour M, De Paoli M, Soldati A
15:20-15:40	**Comparative experimental assessment of velocity, vorticity, acceleration and pressure calculation using time resolved and multi-pulse Shake-the-Box** Michaelis D, Wieneke B	**Data assimilation-based flow field reconstruction from particle tracks over multiple time steps** Jeon YJ, Müller M, Michaelis D, Wieneke B	**PIV Measurements Around a Generic Truck Model in Active Flow Control Experiments** Tokarev M, Minelli G, Zhang J, Noack BR, Chernoray V, Krajnovic S	**Revisiting velocity, concentration and interface measurements in a magnetic micromixer** Ergin FG, Kitenbergs G, Cebers A
15:40-16:00	**RainbowPIV with Improved Depth Resolution - Design and Comparative Study with TomoPIV** Xiong J, Aguirre-Pablo AA, Idoughi R, Thoroddsen ST, Heidrich W	**Adjoint-based Data Assimilation for a Compressible Jet using PIV** Schwarz P, Lemke M, Sesterhenn J	**Research of drag reduction mechanism of micro riblets of supercritical airfoil** Huang Z, Wang H, Yuan M	**Mixing and dynamics induced by flexible canopies composed of high-aspect-ratio structures** Wing L, Hong L, Chamorro LP
19:00-22:00	**Dinner at "Herzogliches Bräustüberl Tegernsee". Busses will leave at 16:30 o'clock from the conference location.**			

Wednesday, July 24th, morning 1

Room A

08:45-09:30	Keynote Lecture Prof. Stefano Discetti, Universidad Carlos III de Madrid, Italy, "Enhancing PIV via data-driven techniques" Session Chair: Prof. Julio Soria

	Room A	Room B	Room C	Room D
	Session 3.1.A: 3D Methods IV **Session Chair: Soria J**	**Session 3.1.B: Pressure & Force I** **Session Chair: van Oudheusden B**	**Session 3.1.C: Applications I** **Session Chair: Wang JJ**	**Session 3.1.D: Multiphase Flows I** **Session Chair: Markovich D**
09:35-09:55	**Instantaneous self-calibration of a 3D imaging system in industrial facility with strong vibrations** Novara M, Schanz D, Geisler R, Gesemann S, Philipp F, Agocs J, Schröder A	**Velocity and pressure reconstruction from sparse particle fields** Agarwal K, Ram O, Wang J, Katz J	**Prandtl's flow visualization film C1 revisited** Willert C, Schulze M, Waltenspül S, Schanz D, Kompenhans J	**Droplet break-up investigations in scaled high-pressure homogenizers with orifice plates** Mutsch B, Kähler CJ
09:55-10:15	**Pinhole camera model with refraction correction for tomographic PIV inside cylinders** Paolillo G, Astarita T	**Pressure field calculation from streamline behavior in the flow through adjacent rectangular orifices** Yusuf Y, Ansari S, Nobes DS	**Turbulent transport in supersonic film cooling with helium injection** Marquardt P, Klaas M, Schröder W	**On the detachment mechanisms of monodisperse bubbles flowing through a wavy channel** Azadi R, Nobes DS
10:15-10:35	**Tomographic PIV calibration procedure in confined optical engine geometry** Daher P, Lacour C, Lefebvre F, Gobin C, Lecordier B	**Velocity and pressure fields of SWBLIs on porous plates** van Oudheusden B, Flinkerbusch A, Schrijer F	**The small-scale kinematics of a variable-density turbulent jet** Lai C, Charonko J, Prestridge K	**Experimental investigation on bubble chains with varying bubble frequencies and narrow size distributions using a Shadow-PIV setup** Ostmann S, Finster M, Schwarze R

10:35-11:05	Coffee break

Wednesday, July 24th, morning 2

	Room A	Room B	Room C	Room D
	Session 3.2.A: 3D Single Camera I **Session Chair: Thurow B**	**Session 3.2.B: Pressure & Force II** **Session Chair: van Oudheusden B**	**Session 3.2.C: Applications II** **Session Chair: Kriegseis J**	**Session 3.2.D: Multiphase Flows II** **Session Chair: Massing J**
11:05-11:25	**Particle Matching and Triangulation using Light-Field Ray Bundling** Clifford C, Tan ZP, Hall E, Thurow B	**Pressure from Tomographic PIV: the Schur Complement method** Carini M, Baker NT, Leclaire B, Auteri F	**PIV investigation on the flow characteristics of a master-slave fluidic oscillator** Li Z, Liu J, Peng D, Zhou W, Liu Y, Wen X	**Tomo-PTV measurement of a drop impact at air-water interface** Steinmann T, Casas J, Braud P, David L
11:25-11:45	**Application of a light-field camera for simultaneous volumetric velocity and film thickness measurements in falling films** Kvon A, Kharlamov S, Bobylev A, Guzanov V, Markovich D	**Comparison of momentum and impulse methods of force estimation using PIV data** Limacher E, McClure J, Yarusevych S, Morton C	**Near wake structure of a square back road vehicle** Cafiero G, Cerutti JJ, Iuso G	**Quantitative Study of Slug Flow Development in a Horizontal Pipe** Xu K, Lim D, Wang S, Kim H
11:45-12:05	**Development of a High-Speed Plenoptic Imaging System for Time-Resolved 3D-PIV and 3D-PTV** Tan ZP, Thurow BS	**Application of the Variational Approach for the Computation of Forces around a Wing and Comparison with other Methods** Diaz D, Protas B, Pons F, David L	**Time-resolved Stereo-PIV measurements of complex flows in automotive headlamp** Kim M, Kim D, Yeom E, Kim KC	**Breakup of O/W/O double emulsion droplets with low viscosity shell in capillary single-step emulsification** Wang J, Liu Z, Pang Y, Li M
12:05-12:25	**Linear Cascade 3D Flow Measurement with Single-camera Light-field PIV** Xu S, Mei D, Ding J, Shi S, Li H, Liu Y, Jiang B	**Effect of the pore geometry on pressure distribution within a bubble penetrating a single pore** Ansari S, Nobes DS	**Large-scale Stereo-PIV measurement of the flow inside an urban street canyon in outdoor conditions** Herpin S, Heitz D, Loisel P, Georgeault P	**Microbreaking and airflow separation in stratified air-water pipe flow - PIV setup and initial results** Vollestad P, Jensen A
12:25-12:45	**Multi-angular recording technique on a single camera for 3D measurements in fluid mechanics** Lacour C, Daher P, Lecordier B	**Force estimates in turbulent vortex wakes of accelerating propulsors: The effects of edge undulation on vortex formation** Kaiser F, Galler J, Kriegseis J, Rival DE	**Modeling iceberg dynamics in a laboratory experiment: PIV analysis of a free floating cylinder in waves** Whitchelo Y, Rabault J, Jensen A	**Prediction of the calcium carbonate growth rate in a vertical slot due to the effect of pressure drop** Kamble P, Ansari S, Nobes DS
12:45-13:30	**Lunch**			

Wednesday, July 24th, afternoon

	Room A	Room B	Room C	Room D
	Session 3.3.A: 3D Single Camera II **Session Chair: Novara M**	**Session 3.3.B: Pressure & Force III** **Session Chair: Rival D**	**Session 3.3.C: Applications III** **Session Chair: Hain R**	**Session 3.3.D: Jets I** **Session Chair: Scharnowski S**
13:30-13:50	**Toward automated 3D PTV for microfluidics** Rossi M, Barnkob R	**Aerodynamic pressure reconstruction on generic surfaces from robotic PIV measurements** Jux C, Sciacchitano A, Scarano F	**Turbulent characteristics of flow through open cell metal foam replica measured by time-resolved PIV** Moon C, Kim KC	**Study of convective heat transfer in an impinging swirling jet by time-resolved PLIF/IR thermometry and stereo PIV** Sharaborin D, Protasov S, Markovich D, Dulin V
13:50-14:10	**Single axis volumetric µPTV for wall shear stress estimation** Fuchs T, Kähler CJ	**Tomographic PIV and pressure reconstructions on a drone wing vortex** Baker NT, Carini M, Cornic P, Illoul C, Leclaire B, Losfeld G, Monnier J-C, Nowinski V, Verbeke C	**Measuring the Sub-Surface Velocity Field in Faraday Flows** Colombi R, Schlüter M, von Kameke A	**Flow structure and combustion in an impinging jet with swirl studied simultaneously by stereo PIV, OH PLIF and HCHO PLIF** Tolstoguzov R, Sharaborin D, Markovich D, Dulin V
14:10-14:30	**3D-LIF Experiments in an Open Wet Clutch by means of Defocusing PTV** Leister R, Kriegseis J	**Flow field and forces on a highly curved plate** Thomas G, Bot P, Habert B	**PIV investigation of the flow around a superhydrophobic obstacle** Di Cicca GM, Iuso G, Onorato M	**Simultaneous Measurements of Temperature and Velocity by Optical Methods in mixing jets** Chitt M, Guendaou D, Rossi L
14:30-15:00	**Coffee break**			
	Session 3.4.A: PTV Methods **Session Chair: Novara M**	**Session 3.4.B: Pressure & Force IV** **Session Chair: Gao Q**	**Session 3.4.C: Applications IV** **Session Chair: Hain R**	**Session 3.4.D: Jets II** **Session Chair: Scharnowski S**
15:00-15:20	**Quantification of Drag Change of Rough Surfaces by Submicron Resolution Long-Distance Micro-PTV** Atencio BN, Chernoray V, Tokarev M	**PIV-based pressure and stress field measurement for non-Newtonian flow fields** Murai Y, Tiwari N, Park HJ, Tasaka Y	**Study of the Stagnating Flow in a Free Wake subjected to an Adverse Pressure Gradient** Breitenstein W, Scholz P	**Velocity Field Measurement of a Supersonic Dense Gas Jet using Particle Image Velocimetry** Nematollahi O, Samsam-Khayani H, Yoon SY, Kim KC
15:20-15:40	**The PTV image processing algorithm of rebounding sand particles over Gobi surface** Zhang C, Huang N, Dun H, Zhang J	**Error propagation from the PIV-based pressure gradient to the integrated pressure by the omni-directional integration method** Liu X, Moreto JR	**Forcing function and volumetric flow field estimation for a cylinder undergoing VIV** McClure J, Morton C, Yarusevych S	**Dynamic behaviour of wave packets in turbulent jets** Raiola M, Ragni D
15:40-16:00	**Performance of Particle Tracking Velocimetry (PTV) with Streak Images** Qureshi MH, Tien W	**Spectral decomposition of the root-mean-square error for pressure estimation from particle image velocimetry** de Kat R	**Study on Stability Analysis of Cavity Flow Using PIV and PSP** Yu J, Ma Y, Wang H, Zhan H	**Volumetric Measurement of Synthetic Jet Impingement with Single-camera Light-field PIV** Ding J, Xu S, Zhao Z, Shi S, Kaufmann R, Ganapathisubramani B
16:00-16:15	**Closing Remarks** **Prof. Christian J. Kähler**			